CLAIMS

What is claimed is:

1. A method of providing power management, the method comprising:

monitoring utilization of a platform device by one or more virtual machines; and

managing power consumption of the platform device based on the monitoring.

2. The method of claim 1 wherein monitoring further comprises determining resource allocation of the platform device to each of said one or more virtual machines when each of said one or more virtual machines is either started or stopped.

3. The method of claim 1 wherein monitoring further comprises:

identifying a change in operation of said one or more virtual machines; and

determining resource allocation of the platform device to said one or more virtual machines based on the change in operation.

4. The method of claim 1 further comprising notifying a guest operating system before modifying a power consumption state of the platform device.

5. The method of claim 1 wherein the platform device is a power-manageable platform device.

6. The method of claim 1 wherein the platform device is a non-power-manageable platform device.

7. The method of claim 1 further comprising:

identifying a decrease in power available to a computing platform;

observing that one of said one or more virtual machines is quiescent;

saving the state of the one of said one or more virtual machines; and

stopping the one of said one or more virtual machines to free resources allocated to the one of said one or more virtual machines.

8. The method of claim 1 further comprising:

identifying a decrease in power available to a computing platform;

observing that none of said one or more virtual machines is quiescent;

determining which subsets of said one or more virtual machines can remain active without exceeding the power available to the computing platform;

selecting a subset that has a maximum value to a user from the subsets of said one or more virtual machines;

saving the state of each virtual machine that is not included in the subset that has the maximum value to the user; and

stopping said each virtual machine to free resources allocated to said each virtual machine.

9. The method of claim 8 wherein the subset that has the maximum value to the user is selected based on a policy specified by the user.

10. The method of claim 9 further comprising receiving notification of the policy from an application running in one of said one or more VMs.

11. The method of claim 7 further comprising reconstructing the state of said one or more virtual machines upon receiving a resource request from said one or more virtual machines.

12. The method of claim 1 wherein any of said one or more virtual machines runs a guest operating system that lacks the capacity to handle power-management signals sent by a computing platform.

13. The method of claim 12 further comprising:

intercepting a power-management signal sent by the computing platform to the guest operating system; and

preserving the state of a corresponding virtual machine if the power-management signal indicates that the computing platform will be powered down.

14. A system comprising:

a computing platform to implement, at least, a virtual machine monitor (VMM) and one or more virtual machines;

the VMM to monitor utilization of a platform device by said one or more virtual machines and to manage power consumption of the platform device based on the monitoring.

15. The system of claim 14 wherein the VMM is to monitor utilization of the platform device by determining resource allocation of the platform device to each of said one or more virtual machines when each of said one or more virtual machines is either started or stopped.

16. The system of claim 14 wherein the VMM is to monitor utilization of the platform device by identifying a change in operation of said one or more virtual machines and determining resource allocation of the platform device to said one or more virtual machines based on the change in operation.

17. An apparatus for providing power management, the apparatus comprising:

a resource watch module to monitor utilization of a platform device by one or more virtual machines; and

a virtual machine monitor (VMM) coupled with the resource watch module, the VMM is to manage power consumption of the platform device based on the monitoring.

18. The apparatus of claim 17 wherein the resource watch module is to determine resource allocation of the platform device to each of said one or more virtual machines when each of said one or more virtual machines is either started or stopped.

19. The apparatus of claim 17 wherein the resource watch module is to identify a change in operation of said one or more virtual machines and to determine resource allocation of the platform device to said one or more virtual machines based on the change in operation.

20. The apparatus of claim 17 wherein the VMM is to notify a guest operating system before modifying a power consumption state of the platform device.

21. The apparatus of claim 17 wherein the platform device is a power-manageable platform device.

22. The apparatus of claim 17 wherein the platform device is a non-power-manageable platform device.

23. The apparatus of claim 17 wherein the VMM is to

identify a decrease in power available to a computing platform,

observe that one of said one or more virtual machines is quiescent;

save the state of the one of said one or more virtual machines; and

stop the one of said one or more virtual machines to free resources allocated to the one of said one or more virtual machines.

24. The apparatus of claim 17 wherein the VMM is to further

identify a decrease in power available to a computing platform,

observe that none of said one or more virtual machines is quiescent,

determine which subsets of said one or more virtual machines can remain active without exceeding the power available to the computing platform,

select a subset that has a maximum value to a user from the subsets of said one or more virtual machines,

save the state of each virtual machine that is not included in the subset that has the maximum value to the user, and

stop said each virtual machine to free resources allocated to said each virtual machine.

25. The apparatus of claim 24 wherein the subset that has the maximum value to the user is selected based on a policy specified by the user.

26. The apparatus of claim 25 wherein the VMM is to receive a notification of the policy from an application running in one of said one or more VMs.

27. The apparatus of claim 17 wherein any of said one or more virtual machines runs a guest operating system that lacks the capacity to handle power-management signals sent by a computing platform.

28. The apparatus of claim 27 wherein the VMM is to intercept a power-management signal sent by the computing platform to the guest operating system and to preserve the state of a corresponding virtual machine if the power-manageable signal indicates that the computing platform will be powered down.

29. A computer readable medium that provides instructions, which when executed on a processor, cause said processor to perform operations comprising:

monitoring utilization of a platform device by one or more virtual machines; and

managing power consumption of the platform device based on the monitoring.

30. The computer readable medium of claim 29 providing further instructions causing the processor to perform operations comprising:

identifying a decrease in power available to a computing platform;

observing that said one or more virtual machines are quiescent;

saving the state of said one or more virtual machines; and

stopping said one or more virtual machines to free resources allocated to said one or more virtual machines.

31. The computer readable medium of claim 29 comprising further instructions causing the processor to perform operations comprising:

intercepting a power-management signal sent by the computing platform to a guest operating system; and

preserving the state of a corresponding virtual machine if the power-management signal indicates that the computing platform will be powered down.